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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/511,690

10/14/2004

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96790P469

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06/09/2008

EXAMINER

VLAHOS, SOPHIA

ART UNIT

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2611

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/511,690	<b>Applicant(s)</b> SUZUKI ET AL.	
	<b>Examiner</b> SOPHIA VLAHOS	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9,10,15,30,31,40,41 and 46 is/are pending in the application.
- 4a) Of the above claim(s) 1-8,11-14,16-29,32-39,42-45 and 47-62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9,10,15,30,31,40,41 and 46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/14/04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to the rejection of previously dependent claims (now independent claims 9, 30, 40) under 35 U.S.C. 103(a) as being unpatentable over Suzuki (U.S. 7,257,148) in view of Mochizuki (U.S. 6,459,721) have been considered but are moot in view of the new ground(s) of rejection.

Page 9 of "Remarks", first paragraph, Applicant argues: "We submit that reducing the DC component in the various spread codes disclosed by Mochizuki cannot disclose, teach, or suggest a digital signal to be transmitted by a spreading code that does not contain any DC component, as in Claim 9. Furthermore, the combination of Suzuki in view of Mochizuki cannot disclose or suggest a spread spectrum process by multiplying a digital signal to be transmitted by a spreading code that does not contain any DC component, as in Claim 9. Newly discovered reference to Giles (U.S. 5,959,550) who teaches using a spreading code that does have not any DC component.

### ***Drawings***

2. Figure 32 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 10, 15, 31, 41, 46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 10, includes an equation, whose derivation is shown in ¶0190 of the patent application publication 2005/0249264. However, the derivation steps from line 1 to the end equation, are not sufficiently explained (rewriting the correlation summation of the first line to the terms of the second line?) to enable a person skilled in the art at the time of the invention to make and/or use the invention. Claim 15 depends on claim 10 and is also rejected since it contains the limitations of claim 10.

Claims 31, 41, are also rejected under the same rationale used to reject claim 10 above. Dependent claim 46 depends on claim 41 and is also rejected since it contains the limitations of claim 41.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9, 15, 30, 40, 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (U.S. 7,257,148) in view of Giles (U.S. 5,959,550) and Curry et al. (U.S. 6,345,073).

With respect to claim 9, Suzuki discloses: a radio transmitter including means for encoding a digital signal to be transmitted using a code (Fig. 1, column 5, lines 7-11, components up to transmitting antenna, see also Fig. 6 showing the digital data SG501 to be encoded (referring to Fig. 5) but also applicable to the data sequence signal of Fig. 1), and a transmission antenna which transmits the signal encoded by said encoding means (Fig. 1, see antenna transmitting signal 108); and a radio receiver (Fig. 3 receiving side, column 6, lines 1-6) including a reception antenna which receives the transmitted signal (Fig. 3, antenna receiving signal 301) and decoding means for performing decoding corresponding to encoding for the signal received by said reception antenna and restoring the digital signal (see Fig. 3 components to the right of antenna 301, and the output of the integrator 306 corresponds to the originally transmitted data (i.e. the restored digital data), also the function of a receiver is understood to be complementary to the function a corresponding transmitter), wherein communication is performed without using any carrier (see Fig. 1 and Fig. 3 where no

Art Unit: 2611

transmission/reception carriers are used and column 2, lines 1-3 (referring to prior art system that is improved by the invention) see a UWB system inherently does not use transmission/reception carriers); wherein said encoding means comprises spreading means for performing a spread spectrum process by multiplying the digital data signal to be transmitted by a spreading code (Fig. 1, see multiplier 103, performing a spread spectrum process on signal (data sequence) and spread code out of block 102), and signal generation means for generating an impulse signal in response to rise and fall of a signal spread by said spreading means and outputting the impulse signal to said transmission antenna (Fig. 1 combination of blocks 104, 105, 106, 107 column 5, lines 13-26 see that the impulse generator is responsive to the rise/fall "1"/"0" of the spread signal), and; wherein said decoding means comprises despread means for performing despread for the signal received by said reception antenna by using a spreading code (see despread operation Fig. 3 performed on the received signal by mixer 305 and an appropriately delayed spreading code out of block 317 (determined by a synchronization operation) see column 6, lines 1-6, 46-62)) and corresponds to a differentiated spread signal (see Fig. 3 blocks 302 and 303 perform a differentiating operation on the received spread signal).

Suzuki does not expressly teach: using a code not containing any DC component signal and peak detection means for detecting a peak of the signal despread by said despread means and restoring the digital signal.

In the same field of endeavor (wireless transmission/reception), Giles discloses: using a using a code not containing any DC component (column 2, lines 60-62).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the system of Suzuki based on the teachings of Giles to ensure no unwanted signal components are generated in the system (that does not use a carrier for transmission).

In the same field of endeavor, discloses: a peak detection means for detecting a peak of a signal despread by despread means and restoring the digital data (column 4, lines 9-17, see that after code phase acquisition, the despread signal (the integrated value of) is a constant value (and theoretically has a peak value since the spreading code of the received signal and the locally generated one are perfectly matched (correlated) to continually detect the presence of desired signal. Curry et al. teaches a peak detector that compares the despread and integrated received signal to an established threshold, to determine the presence of a desired signal).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the system of Suzuki et al., based on the teachings of Curry et al. so that a peak detector is used to determine the presence of a desired signal that is subsequently restored (see Curry et al., column 4, lines 9-15).

Apparatus claim 30, and method claim 40 are rejected base don a rationale similar to the one used to reject claim 9 above.

With respect to claim 15, Suzuki discloses: in that said signal means outputs only an impulse signal in an  $n$ th ( $n$  is an integer not less that 2) harmonic band at a spread

chip rate (column 3, lines 31-43, where instead of using the entire harmonic frequency band of the UWB specification 3GHz - 6GHz, a second harmonic frequency of 3GHz to 5GHz is used to transmit a signal at a spread chip rate as determined by the chip rate of the spread code sequence).

Claim 46 is rejected based on a rationale similar to the one used to reject claim 11 above.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SOPHIA VLAHOS whose telephone number is (571)272-5507. The examiner can normally be reached on MTWRF 8:30-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic



Art Unit: 2611

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SOPHIA VLAHOS/  
Examiner, Art Unit 2611  
6/2/2008

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